

WHAT IS CLAIMED IS:

1. An effect pigment comprising platy titanium dioxide that is substantially substrate-free and has a surface comprising reduced titanium oxide.

2. The effect pigment of claim 1 comprising a plurality of platelets of about 1 to about 25 μm in maximum dimension and a thickness of about 5 to about 600 nm.

3. The effect pigment of claim 2 wherein said platelets have a maximum dimension of about 2 to about 15 μm and a thickness of about 20 to about 400 nm.

4. The effect pigment of claim 3 wherein said titanium dioxide in the area other than the surface is in the rutile crystalline form.

5. The effect pigment of claim 4 wherein said effect pigment contains less than about 40 weight percent substrate based on the total weight of said effect pigment.

6. The effect pigment of claim 4 wherein said effect pigment contains less than about 20 weight percent substrate based on the total weight of said effect pigment.

7. The effect pigment of claim 1 wherein said titanium dioxide in the area other than the surface is in the anatase crystalline form.

8. The effect pigment of claim 1 wherein the degree of reduction of the titanium dioxide surface is such that the pigment is opaque.

9. The pigment of claim 1, wherein the degree of reduction of the titanium dioxide surface is such that the pigment is not opaque.

5 10. A method of preparing a dark titanium dioxide effect pigment comprising providing platy titanium dioxide that is substantially substrate-free and reducing the surface thereof.

10 11. The method of claim 10 wherein said platy titanium dioxide has platelets of about 1 to about 25 μm in maximum dimension and a thickness of about 5 to about 600 nm.

12. The method of claim 10 wherein the surface is reduced by contact with a reducing gas.

15 13. The method of claim 12 wherein the reducing gas is selected from the group consisting of ammonia, hydrogen, a volatile hydrocarbon and mixtures thereof.

20 14. The method of claim 10 wherein said effect pigment contains less than about 40 weight percent substrate based on total weight of the effect pigment.

25 15. The method of claim 10 wherein said effect pigment contains less than about 20 weight percent substrate based on total weight of the effect pigment.

30 16. The method of claim 14 wherein the mica is removed by subjecting the platelets to an extractive dissolution with a combination of phosphoric acid and a mineral acid.

17. In a paint or ink composition including a pigment, the improvement which comprises said pigment being an effect pigment of claim 1.

5 18. In a plastic composition including a pigment, the improvement which comprises said pigment being an effect pigment of claim 1.

10 19. In a cosmetic composition including a pigment, the improvement which comprises said pigment being an effect pigment of claim 1.

20. Automotive paint comprising said paint of claim 17.